



This table shows the progression of skills over the year groups, from Early Years to the end of KS2 for Computing.

| | <u>EYFS</u> | <u>KS1</u> | <u>LKS2</u> | <u>UKS2</u> |
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| <u>Computing Systems and Networks</u> | Develop their small motor skills so that they can use a range of tools competently, safely and confidently. | Recognising technology in school and using it responsibly Identifying IT and how its responsible use improves our world in school and beyond. | Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks. Recognising the internet as a network of networks including the WWW, and why we should evaluate online content. | Recognising IT systems in the world and how some can enable searching on the internet. Exploring how data is transferred by working collaboratively online. |
| <u>Creating Media</u> | Explore, use and refine a variety of artistic effects to express their ideas and feelings. Show resilience and perseverance in the face of a challenge. | IMAGE: Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally DOCUMENT: Using a computer to create and format text, before comparing it to writing non-digitally. IMAGE: Capturing and changing digital photographs for different purposes. | IMAGE: Capturing and editing digital still images to produce a stop-frame animation that tells a story. DOCUMENT: Creating documents by modifying text, images, and page layouts for a specified purpose. AUDIO: Capturing and editing audio to produce a podcast, ensuring that copyright is considered. | IMAGE and AUDIO: Planning, capturing, and editing video to produce a short film. IMAGE: Creating images in a drawing program by using layers and groups of objects DOCUMENT: Designing and creating web pages, giving consideration to copyright, aesthetics, and navigation. |

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| | | <p>AUDIO: Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.</p> | <p>IMAGE: Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.</p> | <p>IMAGE: Planning, developing, and evaluating 3D computer models of physical objects</p> |
| <p><u>Programming</u></p> | <p>Explore how things work.</p> | <p>Writing short algorithms and programs for floor robots, and predicting program outcomes.</p> <p>Designing and programming the movement of a character on screen to tell stories</p> <p>Creating and debugging programs, and using logical reasoning to make predictions.</p> <p>Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.</p> | <p>Creating sequences in a block-based programming language to make music.</p> <p>Writing algorithms and programs that use a range of events to trigger sequences of actions.</p> <p>Using a text-based programming language to explore count-controlled loops when drawing shapes.</p> <p>Using a block-based programming language to explore count-controlled and infinite loops when creating a game.</p> | <p>Exploring conditions and selection using a programmable microcontroller.</p> <p>Exploring selection in programming to design and code an interactive quiz.</p> <p>Exploring variables when designing and coding a game</p> <p>Designing and coding a project that captures inputs from a physical device.</p> |
| <p><u>Data and Information</u></p> | <p>Explain the reasons for rules, know right from wrong and try to behave accordingly.</p> | <p>Exploring object labels, then using them to sort and group objects by properties.</p> <p>Collecting data in tally charts and using attributes to organise and present data on a computer.</p> | <p>Building and using branching databases to group objects using yes/no questions.</p> <p>Recognising how and why data is collected over time, before using data loggers to carry out an investigation.</p> | <p>Using a database to order data and create charts to answer questions.</p> <p>Answering questions by using spreadsheets to organise and calculate data.</p> |

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| <p><u>E-Safety (Linked to PSHE Relationships – Digital Well-being)</u></p> | <p>Know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of 'screen time'.</p> | <p>Being safe and responsible on the Internet. How the Internet is useful. How to balance time online.</p> <p>Risks online – Don't share personal information.</p> <p>Kindness and respect while communicating online. Don't believe everything you see online.</p> | <p>Digital well-being is important, consider what we use the internet for, benefits and risks of online activities, healthy balanced screen time with offline activities.</p> <p>Online relationships, cyberbullying, online stranger danger.</p> <p>Privacy issues, passwords, personal information, sharing, forwarding, pressures of social media.</p> | <p>How to use the Internet positively and how to look after your well-being while being online.</p> <p>Potential risks of being online, strategies to stay safe and to get help.</p> <p>Online relationships, what a respectful and healthy online relationship looks like, inappropriate online relationship and ways to get help, benefits and risk of social media, to recognise what online bullying looks like and how to help make it stop, fake news.</p> |
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Computing is delivered through the Teach Computing programme of study: Spiral curriculum

The units for key stages 1 and 2 are based on a spiral curriculum. This means that each of the themes is revisited regularly (at least once in each year group), and pupils revisit each theme through a new unit that consolidates and builds on prior learning within that theme. This style of curriculum design reduces the amount of knowledge lost through forgetting, as topics are revisited yearly. It also ensures that connections are made even if different teachers are teaching the units within a theme in consecutive years.

See also the Teaching Guides for KS1 and KS2 on the Teach Computing Website for more information

Although Computing is not taught explicitly at EYFS, some Early Learning Goals make links to technology and have been included in the progression map.

National Curriculum

| <u>KS1</u> | <u>KS2</u> |
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| create and debug simple programs | design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts |
| understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions | use sequence, selection, and repetition in programs; work with variables and various forms of input and output |
| use logical reasoning to predict the behaviour of simple programs | use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs |
| recognise common uses of information technology beyond school | use search technologies effectively, appreciate how results are selected and ranked and be discerning in evaluating digital content |
| use technology purposefully to create, organise, store, manipulate and retrieve digital content | select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information |
| use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. | use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact |
| | understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration |